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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,171	10/12/2001	James E. Roddy	83276NAB	1959

7590 05/16/2005

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EXAMINER

FULLER, RODNEY EVAN

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

8M

Office Action Summary

Application No.

09/976,171

Applicant(s)

RODDY ET AL.

Examiner

Rodney E. Fuller

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

RODNEY FULLER
PRIMARY EXAMINER

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/12/01; 03/03/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the abstract exceeds the "150-words" limit. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Imaoka, et al. (US 6,174,060).

The admitted prior art (Figures 1 & 2; Specification, pages 1-8, 11-13) disclose an image writer with three light sources and three modulators all contained in a single

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plane. In other words, the admitted prior art discloses all the structures set forth in the claims except wherein the illumination system (i.e., light sources) are separated from the modulators in two different planes by way of a fold mirrors. However, Imaoka teaches that the footprint of a printer with the light sources and modulators on separate planes. (See Imaoka, Figure 1). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the admitted prior art such that the illumination system and the modulators are on separate planes. The ordinary artisan would have been motivated to modify the admitted prior art as described above to decrease the footprint and overall size of the imaging system. (See *In re Stevens*, USPQ 284 and *In re Japiske*, 86 USPQ 70).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-6, 8, 9, 12, 20-32, 34 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Imaoka, et al. (US 6,174,060).

Regarding claims 1, 20-32, 34 and 35, Imaoka discloses “an illumination system (Fig. 1, ref.#s 1-8) in a first level for providing incident light beams, said illumination

system comprising: a first source for emitting a first polarized light beam having a first color; a second source for emitting a second polarized light beam having a second color; a third source for emitting a third polarized light beam having a third color; fold mirrors for directing each beam to a second level; three polarizing beamsplitters (Fig. 1, ref.# 13G, 13B, 13R) on said second level which receive said polarized beams from said fold mirrors, wherein each polarizing beamsplitter isolates polarization states of each of said first, second, and third polarized light beams; three spatial light modulators (Fig. 1, ref.# 36G, 36B, 36R) on said second level, each comprising an array of pixel sites, wherein each pixel site modulates said first, second, and third polarized light beam from said polarizing beamsplitter prisms to form an array of image pixels according to said digital data; and a dichroic combiner (Fig. 1, ref.# 15) for combining said three modulated light beams into a single writing beam.” (Note: Figure 1 clearly shows the illumination system (i.e., light sources) located in a plane below the plane containing the three modulators.)

Regarding claim 2, Imaoka discloses “wherein said spatial light modulators are reflective Liquid Crystal Devices (LCD).” (column 5, line 57)

Regarding claim 3, Imaoka discloses “wherein said spatial light modulators are transmissive Liquid Crystal Devices (LCD).” (column 4, line 62)

Regarding claim 4, Imaoka discloses “wherein said first, second, and third light sources comprise a collimator, uniformizer and polarizer.” (Fig. 11, ref.#s 1-5, 12, 35)

Regarding claim 5, Imaoka discloses “wherein said spatial light modulators are gated light valves.” (column 1, line 20)

Regarding claim 6, Imaoka discloses "wherein said polarizing beamsplitters are prisms." (Figure 1, ref.# 13G, 13B, 13R)

Regarding claims 8 and 9, Imaoka discloses "wherein said dichroic combiner is an x-cube." (Figure 1, ref. # 15)

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Hattori, et al. (US 5,798,819), Kono, et al. (US 5,883,681) and Scott, et al. (US 6,046,858) each teach a projection system wherein the illumination system and modulators are located on different planes.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney E. Fuller whose telephone number is 571-272-2118. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rodney E Fuller
Primary Examiner
Art Unit 2851

May 12, 2005

A handwritten signature in black ink, appearing to read 'R. E. Fuller', is written over the printed name of the examiner.